

C++ ASSIGNMENT

1.Ques :Calculate the time complexity for the following code snippet.

```
for(int i = 0; i < n; i++) {  
  for(int j = 0; j * j < n; j++) {  
    cout << "PhysicsWallah ";  
  }  
}
```

Ans: $O(n \cdot \sqrt{n})$

2.Ques :Calculate the time complexity for the following code snippet.

```
for(int i = 0; i < n; i++) {  
  for(int j = 0; j * j < n; j++) {  
    cout << "PhysicsWallah ";  
  }  
}
```

Ans: $O(n \log n)$

3.Ques :Calculate the time complexity for the following code snippet.

```
int c = 0;  
for(int i = 0; i < n; i++) {  
  for(int j = 1; j * j < n; j *= 2) {  
    c++;  
  }  
}
```

Ans: $O(n \log n)$

4.Ques: Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = n; i > 0; i /= 2) {
    for(int j = 0; j < i; j++) {
        c++;
    }
}
```

Ans: $O(n)$

5.Ques: Calculate the time complexity for the following code snippet.

```
int c = 0;
for(int i = 1; i < n; i*=2) {
    for(int j = n; j > i; j--) {
        c++;
    }
}
```

Ans: $O(n \log n)$